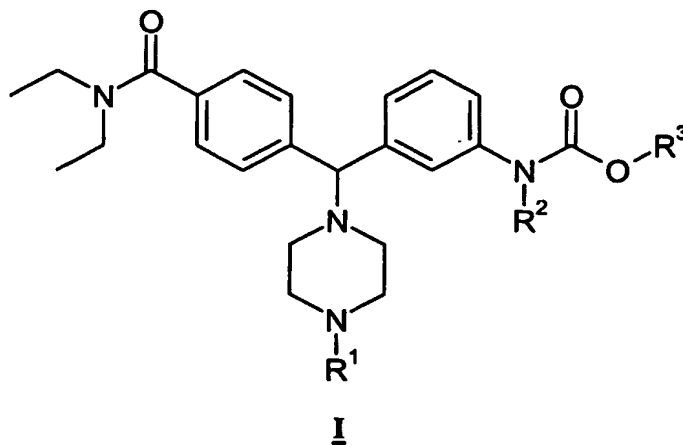


**What is claimed is :**

1. A compound of formula I, a pharmaceutically acceptable salt thereof, diastereomers, enantiomers, or mixtures thereof:



wherein

$R^1$  is selected from -H,  $C_{6-10}$ aryl,  $C_{2-6}$ heteroaryl,  $C_{6-10}$ aryl- $C_{1-4}$ alkyl, and  $C_{2-6}$ heteroaryl- $C_{1-4}$ alkyl, wherein said  $C_{6-10}$ aryl,  $C_{2-6}$ heteroaryl,  $C_{6-10}$ aryl- $C_{1-4}$ alkyl, and  $C_{2-6}$ heteroaryl- $C_{1-4}$ alkyl are optionally substituted with one or more groups selected from -R, -NO<sub>2</sub>, -OR, -Cl, -Br, -I, -F, -CF<sub>3</sub>, -C(=O)R, -C(=O)OH, -NH<sub>2</sub>, -SH, -NHR, -NR<sub>2</sub>, -SR, -SO<sub>3</sub>H, -SO<sub>2</sub>R, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR<sub>2</sub>, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or  $C_{1-6}$ alkyl;

$R^2$  is selected from -H,  $C_{1-6}$ alkyl and  $C_{3-6}$ cycloalkyl, wherein said  $C_{1-6}$ alkyl and  $C_{3-6}$ cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, -CF<sub>3</sub>, -C(=O)R, -C(=O)OH, -NH<sub>2</sub>, -SH, -NHR, -NR<sub>2</sub>, -SR, -SO<sub>3</sub>H, -SO<sub>2</sub>R, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR<sub>2</sub>, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or  $C_{1-6}$ alkyl; and

$R^3$  is selected from  $C_{1-6}$ alkyl and  $C_{3-6}$ cycloalkyl, wherein said  $C_{1-6}$ alkyl and  $C_{3-6}$ cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F, -CF<sub>3</sub>, -C(=O)R, -C(=O)OH, -NH<sub>2</sub>, -SH, -NHR, -NR<sub>2</sub>, -SR, -SO<sub>3</sub>H, -SO<sub>2</sub>R, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR<sub>2</sub>, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or  $C_{1-6}$ alkyl.

2. A compound according to claim 1, wherein

$R^1$  is  $-\text{CH}_2-\text{R}^4$ , wherein  $\text{R}^4$  is selected from phenyl; pyridyl; thienyl; furyl; imidazolyl; triazolyl; pyrrolyl; thiazolyl; and N-oxido-pyridyl, wherein said phenyl; pyridyl; thienyl; furyl; imidazolyl; triazolyl; pyrrolyl; thiazolyl; and N-oxido-pyridyl are optionally substituted with one or more groups selected from  $\text{C}_{1-6}$ alkyl, halogenated  $\text{C}_{1-6}$ alkyl,  $-\text{NO}_2$ ,  $-\text{CF}_3$ ,  $\text{C}_{1-6}$  alkoxy, chloro, fluoro, bromo, and iodo;

$R^2$  is selected from  $-\text{H}$  and  $\text{C}_{1-3}$ alkyl; and

$R^3$  is selected from  $\text{C}_{1-6}$ alkyl, and  $\text{C}_{3-6}$ cycloalkyl.

3. A compound according to claim 2,

wherein  $\text{R}^4$  is selected from phenyl; pyridyl; thienyl; furyl; imidazolyl; pyrrolyl and thiazolyl;

$R^2$  is selected from  $-\text{H}$  and methyl; and

$R^3$  is selected from methyl, ethyl, propyl and isopropyl.

4. A compound according to claim 1, wherein

$R^1$  is  $-\text{H}$ ;

$R^2$  is selected from  $-\text{H}$  and  $\text{C}_{1-3}$ alkyl; and

$R^3$  is selected from  $\text{C}_{1-6}$ alkyl, and  $\text{C}_{3-6}$ cycloalkyl.

5. A compound according to claim 1, wherein the compound is selected from:

Methyl 3-[(4-[(diethylamino)carbonyl]phenyl)(4-benzyl-piperazin-1-yl)methyl]phenylcarbamate;

Methyl-3-{ {4-[(diethylamino)carbonyl]phenyl} [4-(thien-2-ylmethyl)piperazin-1-yl]methyl} phenylcarbamate;

Methyl 3-{ {4-[(diethylamino)carbonyl]phenyl} [4-(thien-3-ylmethyl)piperazin-1-yl]methyl} phenylcarbamate;

Methyl 3-{{4-[(diethylamino)carbonyl]phenyl}[4-(2-furylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

5 Methyl 3-{{4-[(diethylamino)carbonyl]phenyl}[4-(3-furylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

Methyl 3-{{4-[(diethylamino)carbonyl]phenyl}[4-(1H-imidazol-2-ylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

10 Methyl 3-{{4-[(diethylamino)carbonyl]phenyl}[4-(pyridin-2-ylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

Methyl 3-{{4-[(diethylamino)carbonyl]phenyl}[4-(pyridin-4-yl-methyl)piperazin-1-yl]methyl}phenylcarbamate;

15 Methyl 3-{{4-[(diethylamino)carbonyl]phenyl}[4-(1,3-thiazol-2-ylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

20 [3-[[4-[(diethylamino)carbonyl]phenyl][4-(phenylmethyl)-1-piperazinyl]methyl]phenyl]-carbamic acid methyl ester;

[3-[(S)-[4-[(diethylamino)carbonyl]phenyl][4-(3-pyridinylmethyl)-1-piperazinyl]methyl]phenyl]- carbamic acid, methyl ester;

25 [3-[(S)-[4-[(diethylamino)carbonyl]phenyl][4-(2-thiazolylmethyl)-1-piperazinyl]methyl]phenyl]- carbamic acid, methyl ester;

Methyl 3-((R)-{4-[(diethylamino)carbonyl]phenyl}[4-(1,3-thiazol-4-ylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

30 Methyl 3-((S)-{4-[(diethylamino)carbonyl]phenyl}[4-(1,3-thiazol-4-ylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

Methyl 3- $\{(R)\text{-}4\text{-}[(\text{diethylamino})\text{carbonyl}]\text{phenyl}\}$ [4-(1,3-thiazol-5-ylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

5 Methyl 3- $\{(S)\text{-}4\text{-}[(\text{diethylamino})\text{carbonyl}]\text{phenyl}\}$ [4-(1,3-thiazol-5-ylmethyl)piperazin-1-yl]methyl}phenylcarbamate;

[3-[[4-[(diethylamino)carbonyl]phenyl]-1-piperazinylmethyl]phenyl]- carbamic acid, methyl ester;

10 enantiomers thereof; and pharmaceutically acceptable salts thereof.

6. A compound according to any one of claims 1-5 for use as a medicament.

7. The use of a compound according to any one of claims 1-5 in the manufacture  
15 of a medicament for the therapy of pain, anxiety or functional gastrointestinal disorders.

8. A pharmaceutical composition comprising a compound according to any one of claims 1-5 and a pharmaceutically acceptable carrier.

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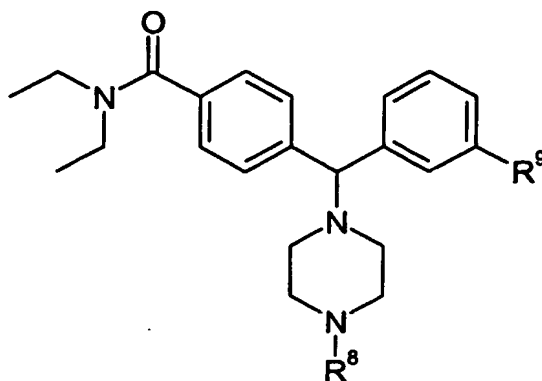
9. A method for the therapy of pain in a warm-blooded animal, comprising: administering to said animal in need of such therapy a therapeutically effective amount of a compound according to any one of claims 1-5.

25 10. A method for the therapy of functional gastrointestinal disorders in a warm-blooded animal, comprising: administering to said animal in need of such therapy a therapeutically effective amount of a compound according to any one of claims 1-5.

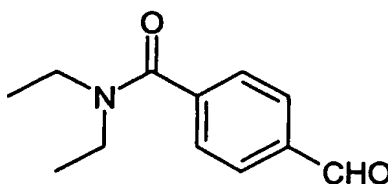
30 11. A method for the therapy of anxiety in a warm-blooded animal, comprising: administering to said animal in need of such therapy a therapeutically effective amount of a compound according to any one of claims 1-5.

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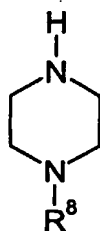
12. A process for preparing a compound of formula II, comprising:

II

5 a) reacting a compound of formula III:

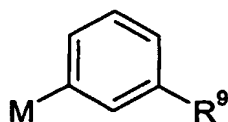
III

with a compound of formula IV

IV

10 in the presence of benzotriazole; and

b) reacting a product formed in step a) with a compound of formula V to form the compound of formula II,

V

15 wherein

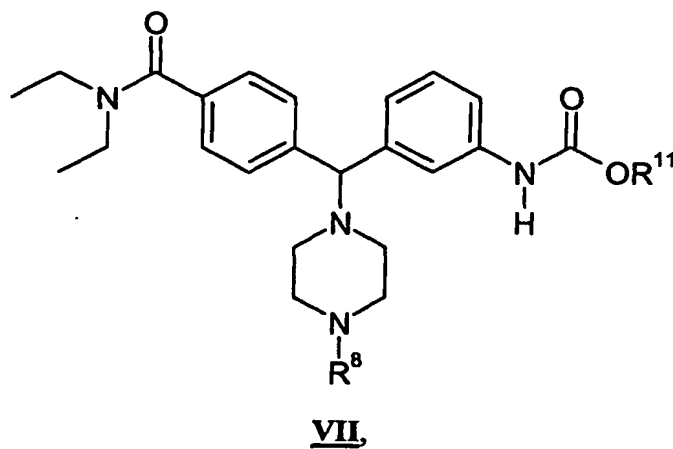
64

$R^8$  is selected from  $C_{1-6}$ alkyl-O-C(=O)-,  $C_{6-10}$ aryl- $C_{1-4}$ alkyl, and  $C_{2-6}$ heteroaryl- $C_{1-4}$ alkyl, wherein said  $C_{1-6}$ alkyl-O-C(=O)-,  $C_{6-10}$ aryl- $C_{1-4}$ alkyl, and  $C_{2-6}$ heteroaryl- $C_{1-4}$ alkyl are optionally substituted with one or more groups selected from  $C_{1-6}$ alkyl, halogenated  $C_{1-6}$ alkyl,  $-NO_2$ ,  $-CF_3$ ,  $C_{1-6}$  alkoxy, chloro, fluoro, bromo, and iodo;

M is selected from Li, Na, K,  $-ZnX^1$ , and  $-MgX^1$ , wherein  $X^1$  is a halogen; and

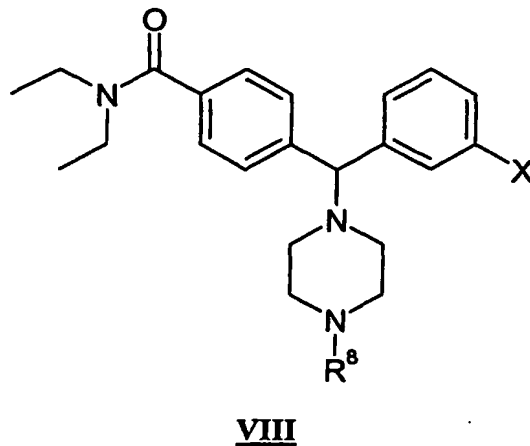
$R^9$  is selected from hydrogen,  $-R$ ,  $-NO_2$ ,  $-OR$ ,  $-Cl$ ,  $-Br$ ,  $-I$ ,  $-F$ ,  $-CF_3$ ,  $-C(=O)R$ ,  $-C(=O)OH$ ,  $-NH_2$ ,  $-SH$ ,  $-NHR$ ,  $-NR_2$ ,  $-SR$ ,  $-SO_3H$ ,  $-SO_2R$ ,  $-S(=O)R$ ,  $-CN$ ,  $-OH$ ,  $-C(=O)OR$ ,  $-C(=O)NR_2$ ,  $-NRC(=O)R$ , and  $-NRC(=O)-OR$ , wherein R is, independently, a hydrogen or  $C_{1-6}$ hydrocarbyl.

13. A process for preparing a compound of formula VII:



15 comprising:

reacting a compound of formula VIII



with a  $C_{1-6}$ alkylcarbamate to form the compound of formula VII,

wherein

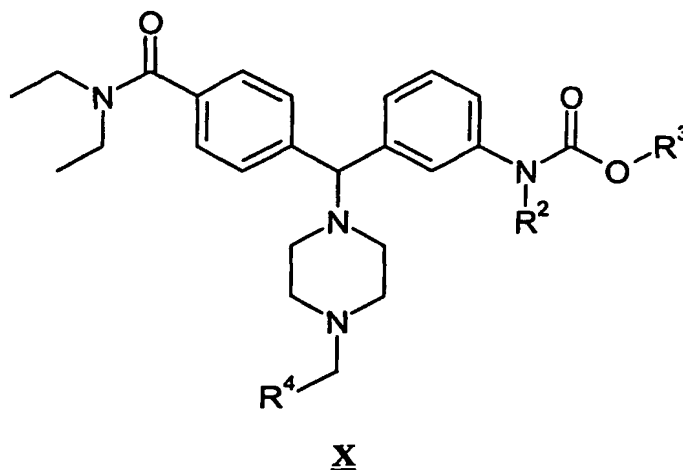
$R^8$  is selected from  $C_{1-6}$ alkyl-O-C(=O)-,  $C_{6-10}$ aryl- $C_{1-4}$ alkyl, and  $C_{2-6}$ heteroaryl- $C_{1-4}$ alkyl, wherein said  $C_{1-6}$ alkyl-O-C(=O)-,  $C_{6-10}$ aryl- $C_{1-4}$ alkyl, and  $C_{2-6}$ heteroaryl- $C_{1-4}$ alkyl are optionally substituted with one or more groups selected  
 5 from -OR, -Cl, -Br, -I, -F, -CF<sub>3</sub>, -C(=O)R, -C(=O)OH, -NH<sub>2</sub>, -SH, -NHR, -NR<sub>2</sub>, -SR, -SO<sub>3</sub>H, -SO<sub>2</sub>R, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR<sub>2</sub>, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or  $C_{1-6}$ alkyl;

X is selected from halogen, triflate, and sulfonamide; and

$R^{11}$  is a  $C_{1-6}$ alkyl.

10

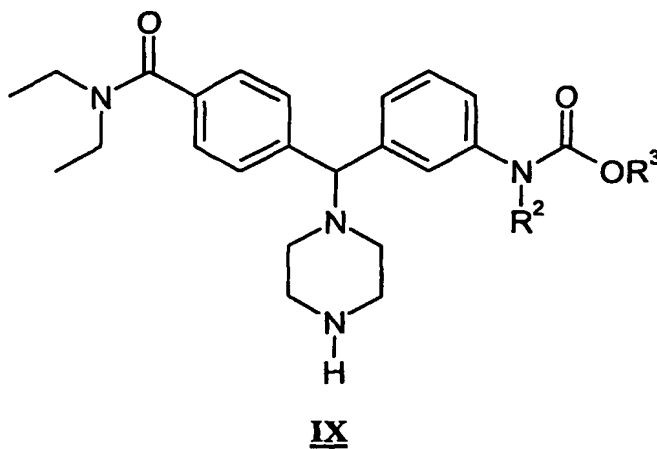
14. A process for preparing a compound of formula X,



comprising:

15

reacting a compound of formula IX,



with  $R^4$ -CHO to form the compound of formula X,

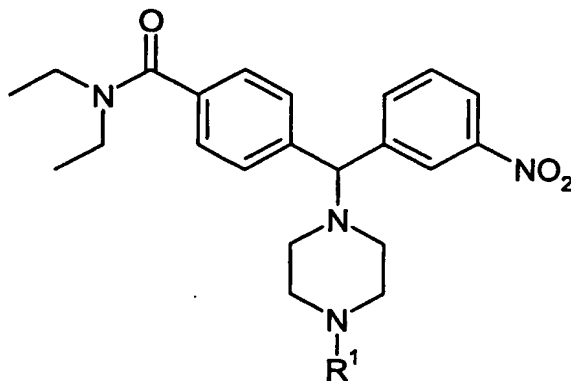
wherein

$R^4$  is selected from phenyl; pyridyl; thienyl; furyl; imidazolyl; triazolyl; pyrrolyl; thiazolyl; and N-oxido-pyridyl, wherein said phenyl; pyridyl; thienyl; furyl; imidazolyl; triazolyl; pyrrolyl; thiazolyl; and N-oxido-pyridyl are optionally substituted with one or more groups selected from  $C_{1-6}$ alkyl, halogenated  $C_{1-6}$ alkyl,  $-NO_2$ ,  $-CF_3$ ,  $C_{1-6}$  alkoxy, chloro, fluoro, bromo, and iodo;

$R^2$  is selected from -H,  $C_{1-6}$ alkyl and  $C_{3-6}$ cycloalkyl, wherein said  $C_{1-6}$ alkyl and  $C_{3-6}$ cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F,  $-CF_3$ ,  $-C(=O)R$ ,  $-C(=O)OH$ ,  $-NH_2$ , -SH, -NHR,  $-NR_2$ , -SR,  $-SO_3H$ ,  $-SO_2R$ ,  $-S(=O)R$ , -CN, -OH,  $-C(=O)OR$ ,  $-C(=O)NR_2$ ,  $-NRC(=O)R$ , and  $-NRC(=O)-OR$ , wherein R is, independently, a hydrogen or  $C_{1-6}$ alkyl; and

$R^3$  is selected from -H,  $C_{1-6}$ alkyl and  $C_{3-6}$ cycloalkyl, wherein said  $C_{1-6}$ alkyl and  $C_{3-6}$ cycloalkyl are optionally substituted with one or more groups selected from -OR, -Cl, -Br, -I, -F,  $-CF_3$ ,  $-C(=O)R$ ,  $-C(=O)OH$ ,  $-NH_2$ , -SH, -NHR,  $-NR_2$ , -SR,  $-SO_3H$ ,  $-SO_2R$ ,  $-S(=O)R$ , -CN, -OH,  $-C(=O)OR$ ,  $-C(=O)NR_2$ ,  $-NRC(=O)R$ , and  $-NRC(=O)-OR$ , wherein R is, independently, a hydrogen or  $C_{1-6}$ alkyl.

15. A compound of formula XI, a pharmaceutically acceptable salt thereof, diastereomers, enantiomers, or mixtures thereof:



**XI**

wherein

$R^1$  is selected from -H,  $C_{6-10}$ aryl,  $C_{2-6}$ heteroaryl,  $C_{6-10}$ aryl- $C_{1-4}$ alkyl, and  $C_{2-6}$ heteroaryl- $C_{1-4}$ alkyl, wherein said  $C_{6-10}$ aryl,  $C_{2-6}$ heteroaryl,  $C_{6-10}$ aryl- $C_{1-4}$ alkyl, and  $C_{2-6}$ heteroaryl- $C_{1-4}$ alkyl are optionally substituted with one or more groups



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selected from -R, -NO<sub>2</sub>, -OR, -Cl, -Br, -I, -F, -CF<sub>3</sub>, -C(=O)R, -C(=O)OH, -NH<sub>2</sub>, -SH, -NHR, -NR<sub>2</sub>, -SR, -SO<sub>3</sub>H, -SO<sub>2</sub>R, -S(=O)R, -CN, -OH, -C(=O)OR, -C(=O)NR<sub>2</sub>, -NRC(=O)R, and -NRC(=O)-OR, wherein R is, independently, a hydrogen or C<sub>1-6</sub>alkyl.